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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,005	08/31/2006	Kirill Zyskovich Bocharov	V-323	4673
802	7590	08/11/2009	EXAMINER	
PATENTTM.US			SINGH, PREM C	
P. O. BOX 82788			ART UNIT	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/554,005

**Applicant(s)**

BOCHAVER, KIRILL ZYSKOVICH

**Examiner**

PREM C. SINGH

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CIS)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/29/2009 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Letechin (WO 02/14412 A1) ("Letechin") in view of Wright (US Patent 4,569,749) ("Wright") and Guffey et al (US Patent 5,753,086) ("Guffey").

4. With respect to claims 2-4, Letechin discloses a method for recycling organic polymer waste including rubber and thermal liquefaction of wastes at a temperature of at least 270°C at increased pressure (up to 6.1 MPa) in at least one solvent, i.e., alkyl benzene; separation of the liquid fraction and its distillation characterized in that in the course of thermal liquefaction of the waste an increased pressure is applied while after the distillation a part of the liquid fraction whose boiling point is at about 210°C, is introduced during the thermal liquefaction of a new batch to be processed, an additional component is added to the solvent at a mass ratio of at least 1:1 (See page 11, claim 1, lines 3-12). Letechin further discloses that the mass ratio of solvent to waste is selected within the range from 1:1 to 4.2:1 (See page 11, claim 2, lines 13-15).

Letechin does not specifically disclose catalytic reforming of a part of the liquid fraction boiling below 220°C. It is to be noted that the liquid boiling below 210°C is light fraction (which should necessarily comprise light naphtha) (See page 2, last paragraph). It is also to be noted that Letechin uses only a part of the liquid boiling below 210°C as the solvent in the next batch of thermal liquefaction. Thus, the remaining part of liquid boiling below 210°C (i.e., light naphtha) must be used elsewhere.

Wright discloses a process of naphtha reforming to produce a valuable gasoline product (See column 2, lines 7-13)

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify Letechin invention and use the fraction boiling below 210°C elsewhere, for example, in a catalytic reforming unit as disclosed by Wright, and making the fraction highly suitable for upgrading to a valuable gasoline product.

Letechin invention does not specifically disclose a fluid bed of the solvent.

Guffey discloses a process similar to Letechin for recycling plastic containing wastes including thermal liquefaction of the feed in a reactor containing an organic solvent (See column 2, lines 36-50). Guffey also discloses use of a continuous stirred tank reactor [41] (See figure 1) and further cites use of fluidized bed reactor in a similar process (See column 1, lines 50-57). Thus, Guffey's disclosure clearly indicates that any type of reactor, including a fluidized bed reactor as claimed, can be used in the process.

Therefore, it would have been obvious to one skilled in the art at the time of invention to use a fluidized bed reactor, as cited by Guffey, for an effective thermal liquefaction process. It is to be noted that in method claims, it is the overall method steps that are given patentable weight not the apparatus limitations thereof unless the apparatus limitations thereof materially alter the overall method. See *In re Leeson Corp.* 185 USPQ 156; *Ex parte Pfeiffer* 1962 CD 408; *Ex parte Kangas* 125 USPQ 419; *Ex parte Foreman* 1924 CD 47; *Ex parte Nelson et al.* 82 USPQ 115; *In re Winder* 1957 CD 175; *Ex parte Hart* 117 USPQ 193.

***Response to Arguments***

5. Applicant's arguments filed 06/29/2009 have been fully considered but they are not persuasive.

6. In the arguments on page 11, the Applicant argues that in Letechin's invention solvent does not interact with rubber-containing wastes in conditions of fluid bed. Therefore, a main difference of the claimed method from Letechin's application and all the documents cited by the Examiner is that the process of exact thermo fluidizing and thermolysis of crushed wastes (rubber crumb) is FIRST realized in FLUID bed of a solvent. It is respectfully submitted that this difference is non-obvious and that applicant's claims are patentable.

The Applicant's argument is not persuasive because as discussed above, Guffey discloses use of a continuous stirred tank reactor [41] (See figure 1) and also cites use of fluidized bed reactor in a similar process (See column 1, lines 50-57). Thus, one skilled in the art could use any type of reactor, including a fluid bed reactor as claimed, because the reactor configuration is not expected to affect the overall process of recycling the waste rubber.

7. In conclusion, the claimed invention is *prima facie* obvious over Letechin in view of Wright and Guffey.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PREM C. SINGH whose telephone number is (571)272-6381. The examiner can normally be reached on 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PREM C SINGH/  
Examiner, Art Unit 1797